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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/688,951

10/21/2003

Namik Hrle

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EXAMINER

NGUYEN, CAM LINH T

ART UNIT

PAPER NUMBER

2161

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/688,951

Applicant(s)

HRLE, NAMIK

Examiner

CamLinh Nguyen

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner:
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/21/2006 has been entered.
2. Applicant's amendments to claims 1 – 30 are acknowledged. Consequently, claims 1 – 30 are currently pending in the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibamiya et al (U.S. 4,956,774) in view of Haderle et al (U.S. 6,006,220) (provided by the IDS).

♦ As per claims 1, 11, 21,

Shibamiya discloses a method/apparatus having a computer readable medium (Fig. 1) of processing a query in a database management system, the method comprising:

- (a) "An optimizer module" (Fig. 1, element 34) for "Generating a preferred access path for a query with at least one variable at execution time, wherein each variable in the query receives a first value during the execution time and said preferred access path is generated based upon said

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first value for each variable in the query” corresponds to the method that allows the system 10 to create the access path and stored it in the application plan 32 (See col. 4, lines 57 – 63).

Shibamiya discloses that several access paths can be generated for a query (4, lines 57 – 63). The query includes the key value for the generated access path (col. 2, lines 34 – 41). Therefore, the first value (first generated access path) corresponds to the “first value” for each variable in the query. “Variable in the query” see col. 34, lines 24 – 31.

(b) “ A storage module” (Fig. 1, element 32) for “Storing information related to said query, said first value for each variable and said preferred access path” Because all the paths that related to the query are stored in the application plan 32 (see col. 4, lines 57 – 63), therefore, Shibamiya patent is able to store “information related to said query, said first value for each variable and said preferred access path”.

(c) “ A functional module” (Fig. 1, element 24, 26) for “ Determining whether to regenerate said preferred access path for use with subsequent execution of the same query using a second value for each variable in that query received during said subsequent execution, wherein said determination is based upon a comparison of the stored information related to said first value for each variable received during said execution time with information related to said second value for each variable received during said subsequent execution” As noted above, there are several access paths for the same query, and all information is stored in the system for selecting a best access path (col. 6, lines 8 – 15). The Shibamiya patent must be able to determine “whether to regenerate said preferred access path for use with subsequent execution of the same query using a second value for each variable based upon a comparison of the stored information related to said first value for each variable with information related to said second value for each variable”,

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wherein the second value corresponds to the second value of the query or the second value in the second access path.

(d) "Regenerating said preferred access path in accordance with said determination" See col. 2, lines 34 – 41.

Shibamiya does not clearly disclose that generate the preferred access path for use with a subsequent execution of the same query based upon a comparison of information related to said second value received during said subsequent execution differs sufficiently from said stored information related to said first value received during said execution time.

However, Haderle, on the other hand, discloses a method for optimizing access path for a query at execution time using an actual value for each variable in the query (see abstract of Haderle). Haderle teaches that there are two type of variable: default and actual (col. 4, lines 1 – 60, Haderle). The default value corresponds to the "stored information" and also corresponds to the "first value during the execution time"; and the actual value corresponds to the second value that differs sufficiently from the stored value. In other word, Haderle teaches that "regenerating said preferred access path for said query in response to said comparison indicating that said information related to said second value differs sufficiently from said stored information related to said first value to enable generation of an access path different than said preferred access path".

Since both invention are in the same field (optimizing query), it would have been obvious to one with ordinary skill in the art at the time the invention was made to apply the teaching of Haderle into the invention of Shibamiya because the combination would provide the user with the best access path in order to retrieve the most accurate result.

♦ As per claims 2, 12, 22, the combination of Shibamiya and Haderle disclose:

- “Wherein step (a) further includes: (a.1) generating a preferred access path for said query based further upon a frequency distribution of said first value for each variable in said query” See col. 2, lines 34 – 41, col. 29, lines 8 – 13.

♦ As per claims 3, 13, 23, the combination of Shibamiya and Haderle disclose:

- “Wherein step (b) further includes: (b.1) generating a unique identifier unambiguously denoting the query” See col. 1, lines 54 – 63, wherein Shibamiya discloses an index that includes the key value and an identifier, and Shibamiya system is able to select an access path having at least one index (col. 3, lines 58 – 65).

♦ As per claims 4, 14, 24, the combination of Shibamiya and Haderle disclose:

- “Wherein step (b) further includes: (b.1) storing said first value for each variable independently” As noted above, there are several access paths for the same query, and all information is stored in the system for selecting a best access path (col. 6, lines 8 – 15). Therefore, the first value for each variable is stored independently (also see Example 1 in col. 5, lines 109 – 110, wherein the first keys are stored for each column in the index).

♦ As per claims 5, 15, 25, the combination of Shibamiya and Haderle disclose:

- “Wherein step (b) further includes: (b.1) determining a frequency distribution of said first value for each variable” col. 5, lines 15 – col. 6, lines 15, col. 34, lines 24 – 31 of Shibamiya.

♦ As per claims 6, 16, 26, the combination of Shibamiya and Haderle disclose:

- “Wherein step (b) further includes: (b.1) determining a unique indicator unambiguously denoting a category of values that cause the generation of the same access path” since

there are common value and distinct values in Shibamiya patent (col.25, lines 36 – 50), therefore, there are at least two type of categories of values that cause the generation of the same access path.

♦ As per claims 7, 17, 27, the combination of Shibamiya and Haderle disclose:

- “Wherein step (b.1) further includes: (b.1.1) choosing a category, wherein said category is at least one of: a category of values causing a table-space scan access path, a category of values causing an index-scan access path, a category of values causing an index-access access path, and a category corresponding to a cardinality range of said first value” See col. 18, lines 36 – 44, wherein Shibamiya discloses the optimizer can choose between a sequential table scan or index scan.

♦ As per claims 8 - 9, 18 – 19, 28 – 29, the combination of Shibamiya and Haderle disclose:

- “Wherein step (c) includes: (c.1) categorizing said second value for each variable” corresponds to the value that has a distinct value and the first value belong to the common value as disclosed in claim 6 of Shibamiya.
- “Wherein step (c) includes: (c.2) determining whether said first value and said second value belong to a different category” since both values are categorized in different categories (common and distinct), therefore, first value and said second value belong to a different category.

♦ As per claims 10, 20, 30, the combination of Shibamiya and Haderle disclose:

- “Wherein step (d) includes: (d.1) storing the regenerated preferred access path and corresponding second values for each variable and frequency distribution” As discussed above the system is able to store different access path and corresponds value (see col. 4,

lines 57 – 63 of Shibamiya) in the database, and calculate the frequency distribution (col. 29, lines 40 – 45 of Shibamiya).

Response to Arguments

5. Applicant's arguments filed 12/21/2006 have been fully considered but they are not persuasive.

Applicant argues that the default filter factor of Haderle et al patent is different with the “first value” in the claim invention. The Examiner respectfully disagrees.

Claim 1 called for “wherein each variable in the query receives a first value during the execution time”. This first value corresponds to the default value in Haderle patent. There is no different between the first value and the default value. The default value can be received during the execution time since Haderle teaches “the query compiler 116 performs the re-optimizing during query execution time when the values for the query optimizer are available” (col. 4, lines 61 – 63, Haderle). Therefore, when generating the first access path, the default value (first value) can be given during the execution time in order to generate the first access path.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CamLinh Nguyen whose telephone number is (571) 272 - 4024. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on (571) 272 - 4080. The fax phone number for the organization where this application or proceeding is assigned is 571 – 273 - 8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen, Cam-Linh

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A handwritten signature in black ink, appearing to read "Nguyen Cam-Linh", is written over a horizontal line.